

Reply to office action dated 12/14/04

REMARKS/ARGUMENTS

In view of the following remarks, Applicant respectfully requests reconsideration and allowance of the subject application. This communication is believed to be fully responsive to all issues raised in the 12/14/04 Office Action.

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CLAIM REJECTIONS §102

Claims 1-3, 6-7, and 9-13 are rejected under §102 as being anticipated by US patent No. 5,441,593 to Baughman et al (hereinafter "Baughman").

Claims 1-4, 6-7, 10-12 and 14-25 are rejected under §102 as being anticipated by US patent No. 6,745,469 to Soik et al (hereinafter "Soik").

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CLAIM REJECTIONS §103

Claims 1-8, 10-12, and 14-25 are rejected under §103 as being unpatentable over US patent No. 6,745,469 to Soik et al (hereinafter "Soik").

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Claim 1 is directed to a method and is amended to recite:

- forming a slot into a semiconductor substrate and extending between a first substrate surface and a generally opposing second substrate surface, the slot extending along a long axis that extends generally parallel the first surface and being defined, at least in part, by a pair of sidewalls which extend generally parallel to the long axis; and,

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- forming at least one bowl-shape into the substrate so that the long axis passes therethrough, the bowl shape being connected to the pair of sidewalls of the slot and defining, at least in part, a terminal region of the slot.

5        These limitations are not described or taught by the art of record. Accordingly, Applicant respectfully requests that the §102/103 rejections of claim 1 be withdrawn.

      Claims 2-9 depend from allowable claim 1 and are allowable for at least the reasons described above in relation to claim 1. Accordingly, Applicant  
10       respectfully requests that the §102/103 rejections of claims 2-9 be withdrawn.

      Claim 10 is directed to a method and is amended to recite:

- forming a fluid-feed slot between a first substrate surface and a second generally opposing substrate surface, the fluid-feed slot extending along a long axis which extends generally parallel to the  
15       first surface, and having a central region and at least one terminal region arranged along the long axis wherein the terminal region is wider at the first surface than the central region as measured generally orthogonally to the long axis; and,
- blending the slot at the first surface, at least in part, to decrease  
20       stress concentrations on substrate material proximate the first surface.

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These limitations are not described or taught by the art of record. Accordingly, Applicant respectfully requests that the §102/103 rejections of claim 10 be withdrawn.

Claims 11-13 depend from allowable claim 10 and are allowable for at least the reasons described above in relation to claim 10. Accordingly, Applicant respectfully requests that the §102/103 rejections of claims 11-13 be withdrawn.

Claim 14 is directed to a method and is amended to recite:

- forming a fluid-feed slot by removing substrate material between a first substrate surface and a second generally opposing substrate surface, the fluid-feed slot extending along a long axis which lies generally parallel to the first substrate surface, the fluid-feed slot having a cross-section at the first surface and taken generally parallel the first surface comprising a narrower central region positioned between two wider terminal regions; and,
- rounding the slot at the first surface by removing additional substrate material, at least in part, to decrease stress concentrations on substrate material proximate the first surface.

These limitations are not described or taught by the art of record. Accordingly, Applicant respectfully requests that the §102/103 rejections of claim 14 be withdrawn.

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Claim 15 depends from allowable claim 14 and is allowable for at least the reasons described above in relation to claim 14. Accordingly, Applicant respectfully requests that the §102/103 rejections of claim 15 be withdrawn.

Claim 16 is directed to a method and recites:

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- forming a slot into a substrate between a first substrate surface and a second generally opposing substrate surface; and,
  - rounding a region where the slot intersects the first surface.

The Office contends that the limitations of claim 16 are disclosed by Soik. Applicant respectfully disagrees. Claim 16 recites “rounding a region where the slot intersects the first surface”. The Office contends that Soik “[f]igures 12-13 and 15-20 disclose various blending or rounding methods for forming the slot”. Applicant respectfully disagrees. The Office Action is not specific as to which method or feature that the Office contends is analogous to “rounding a region where the slot intersects the first surface” as recited in claim 16. For purposes of

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furthering prosecution, Applicant examined Soik and responds here arguendo on the assumption that the Office is contending that forming contour cut 310 into inflow side 304 is analogous to “rounding a region where the slot intersects the first surface” as recited in claim 16.

Beginning at Col. 10 line 34, Soik describes the features of Figs. 11-14.

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At Col. 10, line 49, Soik states “[c]ontour cut 310 is shown as a “V” groove extending about 1.0mm into plate 302”. A “V” groove inherently has straight linear sides or sidewalls. Such a description is consistent with Figs. 4, 7, 8, 10,

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12, 13, 15, and 17-20. No other configurations are shown or described. In contrast, to the straight linear sidewalls of Soik, claim 16 recites "rounding a region where the slot intersects the first surface". Rounding inherently forms curvilinear surfaces. Examples of rounding can be evidenced from Figs. 6a, 9  
5 and 10 of the present application. As far as Applicant can ascertain, Soik contains no such analogous structures or descriptions in relation to contour cut 310. For at least these reasons, Soik does not describe the limitations of claim 16. Further, Soik contains no suggestion to round a region of a slot intersecting the inflow surface. At least for these reasons Applicant requests that the §102  
10 rejection of claim 16 be withdrawn.

Claims 17-19 depend from allowable claim 16 and are allowable for at least the reasons described above in relation to claim 16. Accordingly, Applicant respectfully requests that the §102/103 rejections of claims 17-19 be withdrawn.

Claim 20 is directed to a method and is amended to recite:

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- forming a central region of a slot into a semiconductor substrate the central region extending between a first substrate surface and a generally opposing second substrate surface; and,
  - forming two terminal regions of the slot into the first surface generally contiguous with and interposed by the central region,  
20 each of the two terminal regions having a width at the first surface taken generally orthogonal to a long axis of the slot that is greater than a width of the central region at the first surface taken generally

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orthogonal to the long axis of the slot where the long axis does not intersect the first substrate surface.

These limitations are not described or taught by the art of record. Accordingly, Applicant respectfully requests that the §102/103 rejections of  
5 claim 20 be withdrawn.

Claims 21-25 depend from allowable claim 20 and are allowable for at least the reasons described above in relation to claim 20. Accordingly, Applicant respectfully requests that the §102/103 rejections of claims 21-25 be withdrawn.

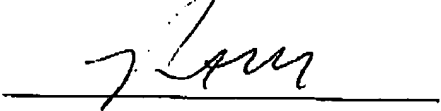
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CONCLUSION

Claims 1-25 are believed to be in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the present application. Should any issue remain that prevents immediate issuance of the application, the Examiner is encouraged to contact the undersigned attorney to discuss the unresolved issue.

Respectfully Submitted,  
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